GRASSROOTS SCIENCE

The Grassroots Science Museums

A network of **27** science museums in **North Carolina** – *serving all **100 counties***

PRESENTATION CREATED BY: Stephen Saucier, Executive Director
February 21, 2013

GRASSROOTS SCIENCE

MOUNTAINS

		Home County
Catawba Science Center	(Hickory)	Catawba
Colburn Earth Science Museum	(Asheville)	Buncombe
KidSenses Children's Museum	(Rutherfordton)	Rutherford
Health Adventure	(Asheville)	Buncombe
Highlands Nature Center	(Highland)	Macon
Pisgah Astronomical Research Institute	(Rosman)	Transylvania
Western NC Nature Center	(Asheville)	Buncombe

PIEDMONT

Carolina Raptor Center	(Huntersville)	Mecklenburg
Discovery Place	(Charlotte)	Mecklenburg / Richmond
Charlotte Nature Center	(Charlotte)	
Discovery Place Kids	(Huntersville)	
Discovery Place Kids	(Rockingham)	
Fascinate-U Children's Museum	(Fayetteville)	Cumberland
Granville County Museums	(Oxford)	Granville
Greensboro Children's Museum	(Greensboro)	Guilford
GO-Science	(Greenville)	Pitt
Imagination Station	(Wilson)	Wilson
Iredell Museums	(Statesville)	Iredell
Museum of Life & Science	(Durham)	Durham
Natural Science Ctr. of Greensboro	(Greensboro)	Guilford
Rocky Mount Children's Museum	(Rocky Mount)	Nash
Schiele Museum of Natural History	(Gastonia)	Gaston
SciWorks	(Winston- Salem)	Forsyth
Sylvan Heights Bird Park	(Scotland Neck)	Halifax

COAST

Aurora Fossil Museum	(Aurora)	Beaufort
Cape Fear Museum	(Wilmington)	New Hanover
Core Sound Waterfowl Park	(Harker's Island)	Carteret
Museum of Coastal Carolina	(Ocean Isle Beach)	Brunswick
Ingram Planetarium	(Sunset Beach)	
Port Discover Science Center	(Elizabeth City)	Pasquotank
Wilmington Children's Museum	(Wilmington)	New Hanover

A network of **27** science museums in **North Carolina** – *serving all **100** **counties***

GRASSROOTS SCIENCE

A PUBLIC / PRIVATE PARTNERSHIP

FY 2012-13 FUNDING = **$2,773,043** / GOAL = **$2,900,000**

5.8% (STATE FUNDING = **$2,773,043**)

100% ANNUAL EXPENSE (27 Funded Organizations) = **$47,320,847**

- **$16.16** LEVERAGED PER **$1** OF GRASSROOTS' FUNDING FROM **GENERAL ASSEMBLY**
- **$0.95** PER VISITOR (STATE COST)

GRASSROOTS SCIENCE

A **Public / Private Partnership** to Advance **STEM Learning** and **Career Development** in **Science and Technology**

- *Leveraging the funds received from the citizens of NC to link **STEM learning** to **STEM working** for the benefit of NC citizens*
- *Creating new opportunities to drive the **private sector** by attracting learners to the STEM fields*
- *Strengthening **communities** and **economic development** through **tourism**, **business recruitment** and **quality of life** experiences*

REVENUE – *Leveraging State Funds*

GRASSROOTS SCIENCE

EARNED INCOME:

- Ticket Sales / Admission Fees
- Educational Program Fees
- Traveling Educational Programs Fees
- Field Trip Fees
- Special Exhibit Fees
- Teacher Professional Development Program Fees
- Gift Shop Sales
- Food Sales
- Facilities Rental Fees
- Fees For Service

~ 50%

CONTRIBUTED INCOME:

- ***NC STATE SUPPORT – "GRASSROOTS"***
- Individual Donations
- Corporate Donations
- Exhibit Sponsorships
- Grants
- Fundraising Events
- Board of Directors' Support
- Local Municipal Support
- Other Direct Financial and In-Kind Support

5.8 %
(2012)

~ 50%

SMALL BUSINESSES –

Generating Earned Income – Business Income

GRASSROOTS SCIENCE

EARNED INCOME: (Business Income)
▪ Ticket Sales / Admission Fees
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ENTREPRENEURIAL ENVIRONMENTS

- **Generating Revenue** – Ticket sales / fees for service
- **Expanding Markets in NC** – Statewide service
- **Leveraging State Dollars** – Sustainable budgets for science & technology education and career development

GRASSROOTS SCIENCE

A PUBLIC /PRIVATE PARTNERSHIP:

Preparing Children for the STEM Fields

STEM

***S**cience, **T**echnology, **E**ngineering & **M**ath*

Public / Private Partnership

***5.8%** State Funding -*

$16.[16] leveraged per $1 state funding

STEM Learning

***S**cience, **T**echnology, **E**ngineering & **M**ath*

Grassroots Science delivers learning experiences to all **100 NC counties** to **3,800,000** NC citizens annually

STEM Working

***S**cience, **T**echnology, **E**ngineering & **M**ath*

Grassroots Science plays a significant role - preparing learners to participate in NC's growing **science- and tech-based economy**

GRASSROOTS SCIENCE

Statewide STEM Impact:

Geographically Distributed – Serve all 100 Counties

GRASSROOTS SCIENCE

GRASSROOTS SCIENCE MUSEUMS:
Mission & Programs

- The *Grassroots Science Museums*, a statewide partnership of 27 museums, is dedicated to inspiring and educating youth and adults in science and technology or STEM for NC's competitive future.

  - ❑ A public/private partnership with NC to advance learning and career development in STEM *(science, technology engineering and math*).
  - ❑ Leverage state funding from the citizens of NC to link STEM learning to future careers in the private sector
  - ❑ Strengthen communities and regional economic development through tourism, business recruitment, and quality of life experiences.

GRASSROOTS SCIENCE

GRASSROOTS SCIENCE MUSEUMS:
Mission & Programs

- The 27 funded *Grassroots Science Museums provide:*

  - ❑ Real-world STEM learning experiences / Hundreds of interactive exhibits, and facilitated and traveling educational programs
  - ❑ Interactive exhibits and programs that are facilitated by education professionals
  - ❑ Learning experiences in the museum sites and as traveling experiences to all 100 counties.

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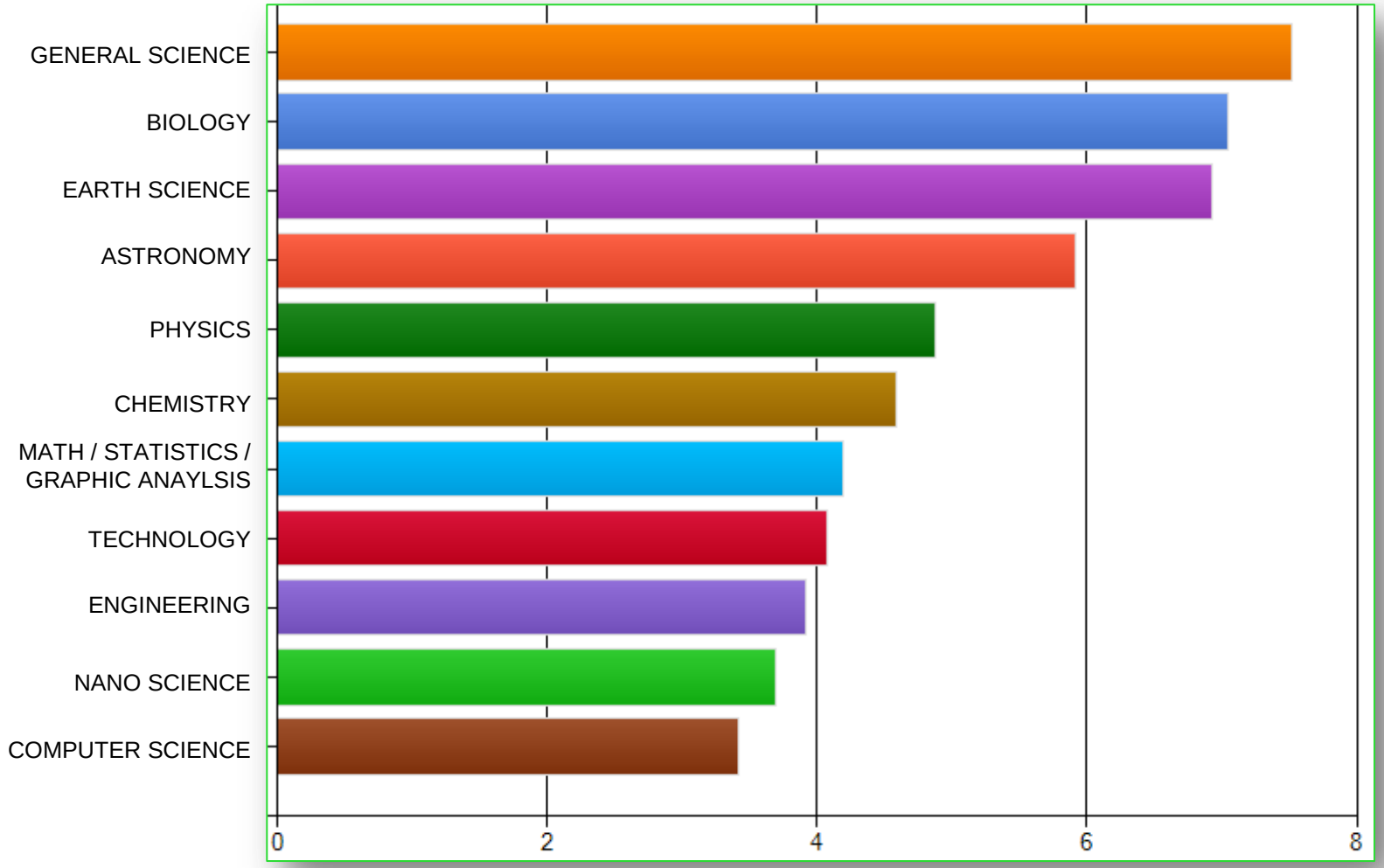
GRASSROOTS SCIENCE MUSEUMS:
Mission & Programs

- STEM Learning experiences include (*but is not limited to*):

  - ❑ General science
  - ❑ Physical science
  - ❑ Natural science
  - ❑ Biology
  - ❑ Earth science
  - ❑ Astronomy
  - ❑ Chemistry
  - ❑ Math and statistics
  - ❑ Nano-science
  - ❑ Computer science.

GRASSROOTS SCIENCE

STEM Subject Areas Ranking



GRASSROOTS SCIENCE

STEM Education Services & Products

- **Rigor / Relevance**

- Hundreds of STEM-Based Interactive Exhibits
- Direct STEM Instruction (In-Person)
- In-School STEM Programs (Traveling Programs)
- STEM-Based Classroom Activities as part of Field Trips
- Extended STEM Learning (Beyond School Hours)
- STEM-Based Camps
- STEM-Related Internships / Job Shadowing
- STEM-Based Field Experiences
- STEM-Based Tutoring / Mentoring
- STEM-Based Competitions
- On-Line STEM Instruction

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STEM - Exhibits & Programs

- **Rigor / Relevance**

Museum of Life and Science - Durham

GRASSROOTS SCIENCE

STEM - Exhibits & Programs

- **Rigor / Relevance**

Discovery Place - Charlotte

GRASSROOTS SCIENCE

STEM - Exhibits & Programs

- **Rigor / Relevance**

Pisgah Astronomical Research Institute - Rosman

GRASSROOTS SCIENCE

STEM - Exhibits & Programs

- **Rigor / Relevance**

Rocky Mount Children's Museum and Science Center – Rocky Mount

GRASSROOTS SCIENCE

STEM - Exhibits & Programs

- **Rigor / Relevance**

KidSenses - Rutherfordton

GRASSROOTS SCIENCE

STEM Education Services & Products

- **Rigor / Relevance**

Fascinate-U Children's Museum - Fayetteville

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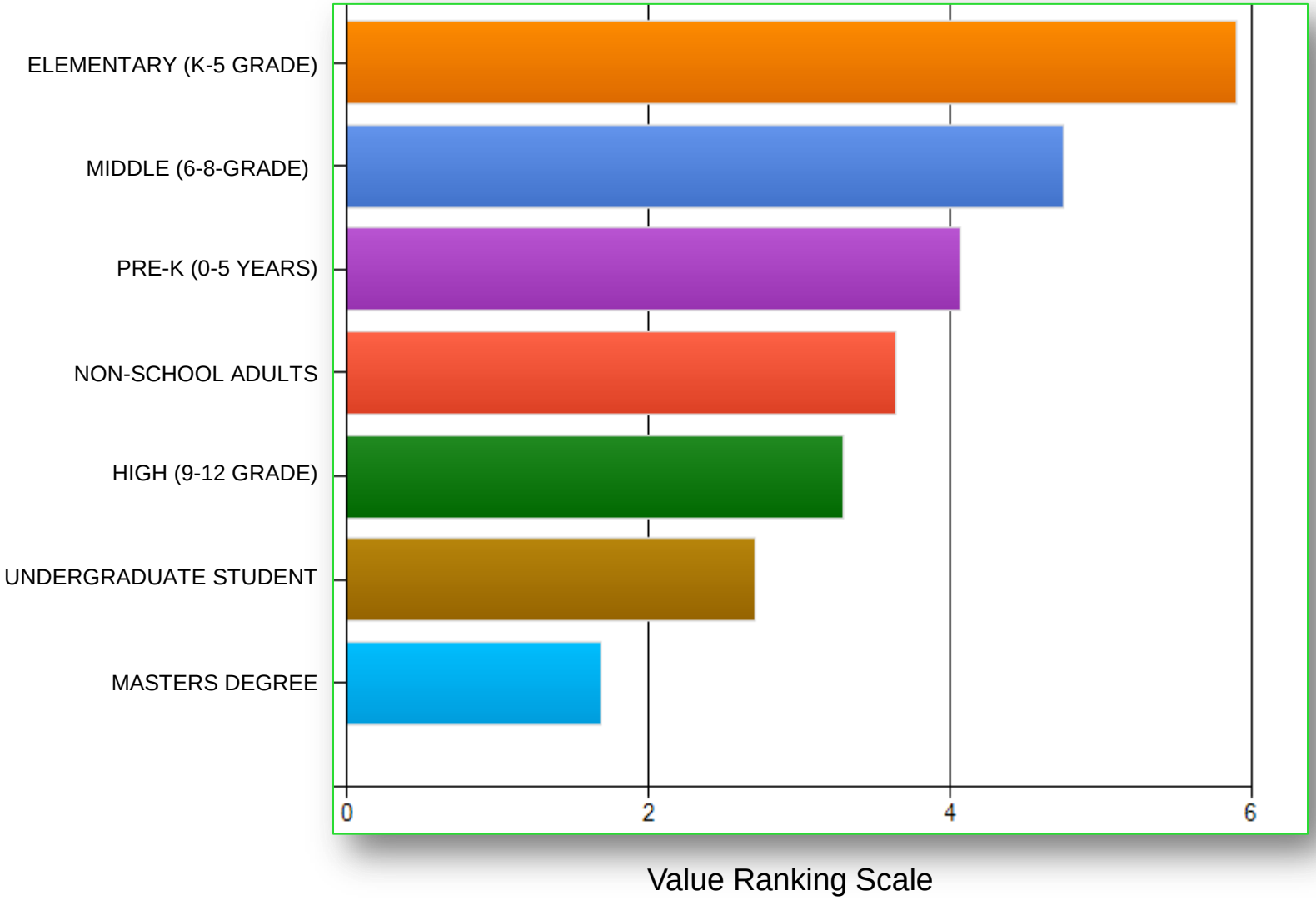
STEM Audiences Ranking (by grade / age level)



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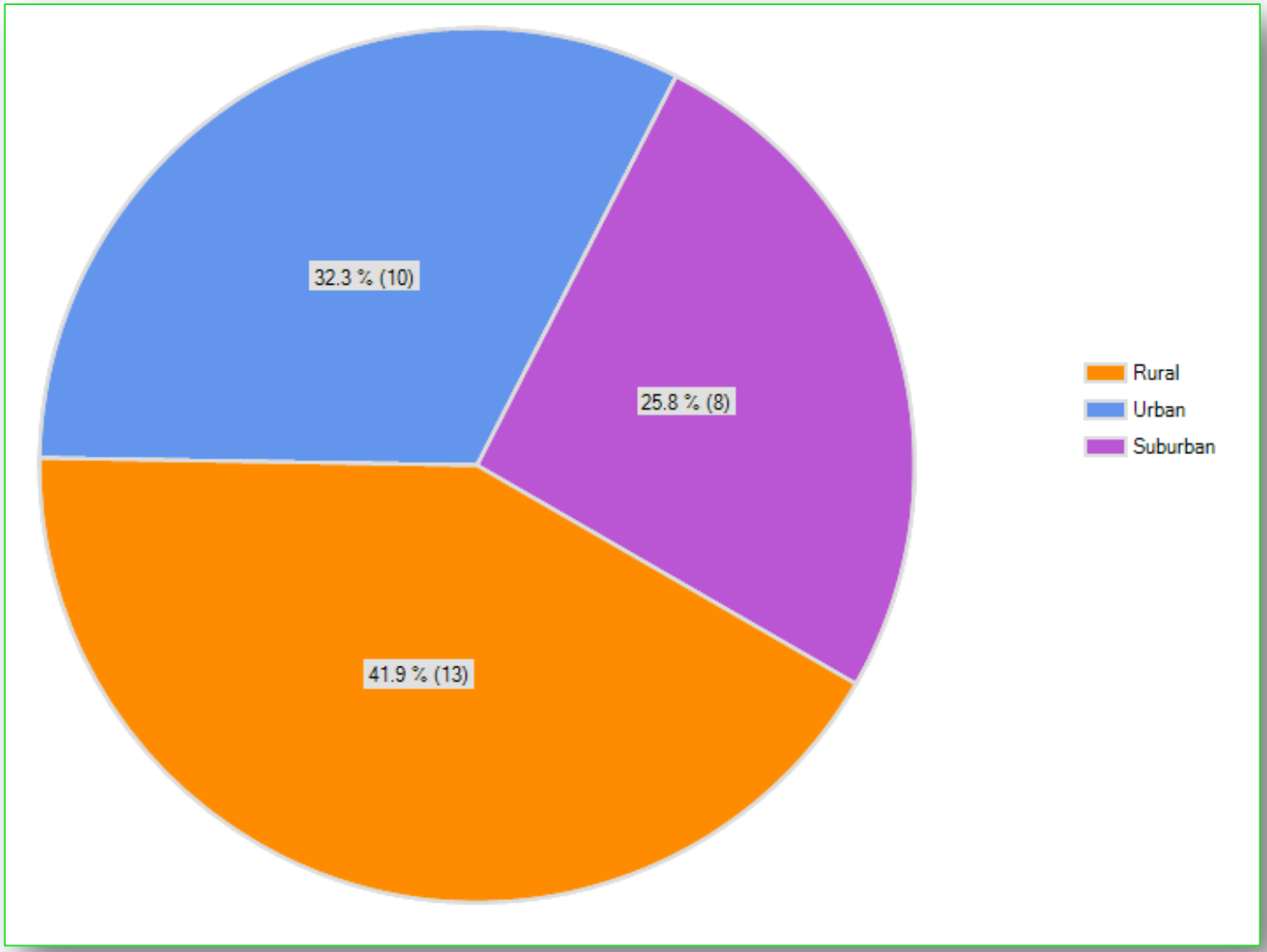
STEM Audiences: Community-Types (by Museum Location)



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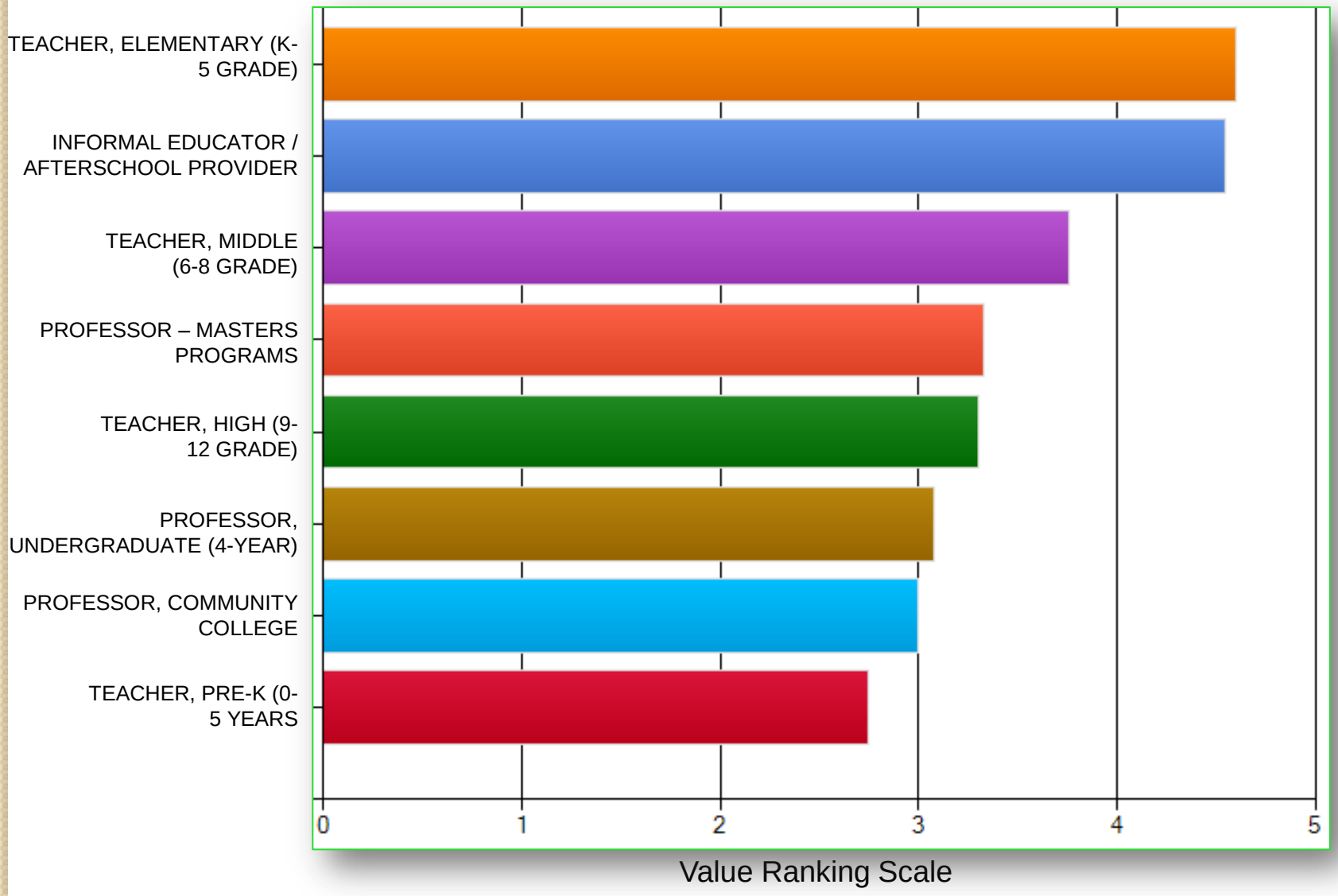
STEM Professional Development Audiences Ranking (by teacher / educator type served)



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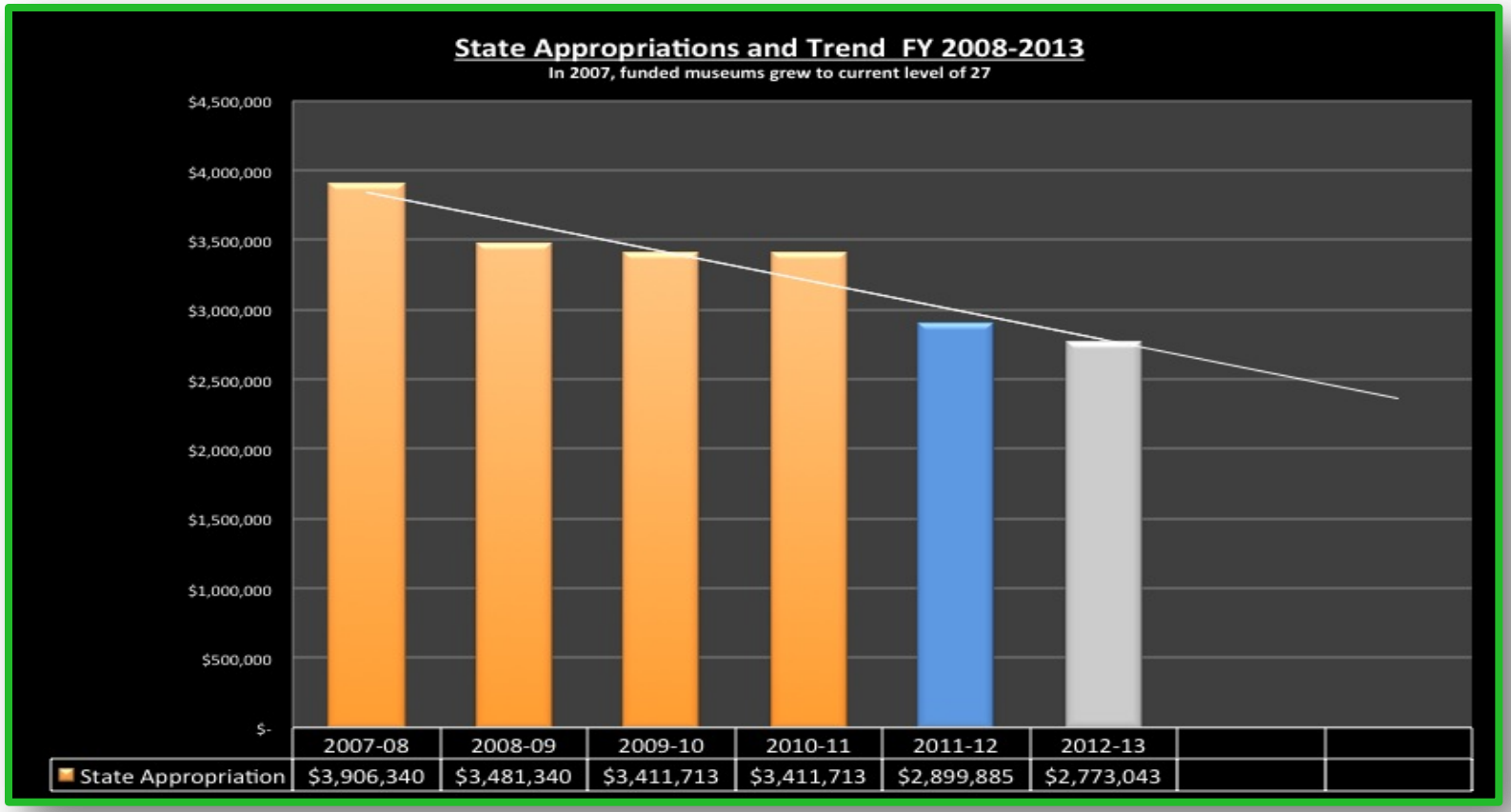
Statewide STEM Impact:

Geographically Distributed – Serve all 100 Counties

GRASSROOTS SCIENCE

GRASSROOTS SCIENCE MUSEUMS:

- **Funding Trend: 6-years**



FY2012 -13 = $2,773,043

GRASSROOTS SCIENCE

GRASSROOTS SCIENCE MUSEUMS:

- **Goal (FY2013-14)**

	2007	2012
HISTORICAL	NC STATE SUPPORT (27 SCIENCE MUSEUMS)	
	$3,906,340 →	**$2,773,043**
		(-$1,133,297)
	SUPPORT AS A % OF COMBINED ANNUAL INCOME	
	(9.7%)	**(5.8%)**

9% ---------- 6%

	2013
TARGET (FY2013-14)	NC STATE SUPPORT (27 SCIENCE MUSEUMS)
	$2,900,000
	SUPPORT AS A % OF COMBINED ANNUAL INCOME
	6.1%

REVENUE – *Leveraging State Funds*

GRASSROOTS SCIENCE

EARNED INCOME:

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5.8 %
(2012)

~ 50%

GRASSROOTS SCIENCE

STEM COMPANIES:

Supporting Grassroots Science Museums

SMALL BUSINESSES –

Generating Earned Income – Business Income

GRASSROOTS SCIENCE

EARNED INCOME: (Business Income)
▪ Ticket Sales / Admission Fees
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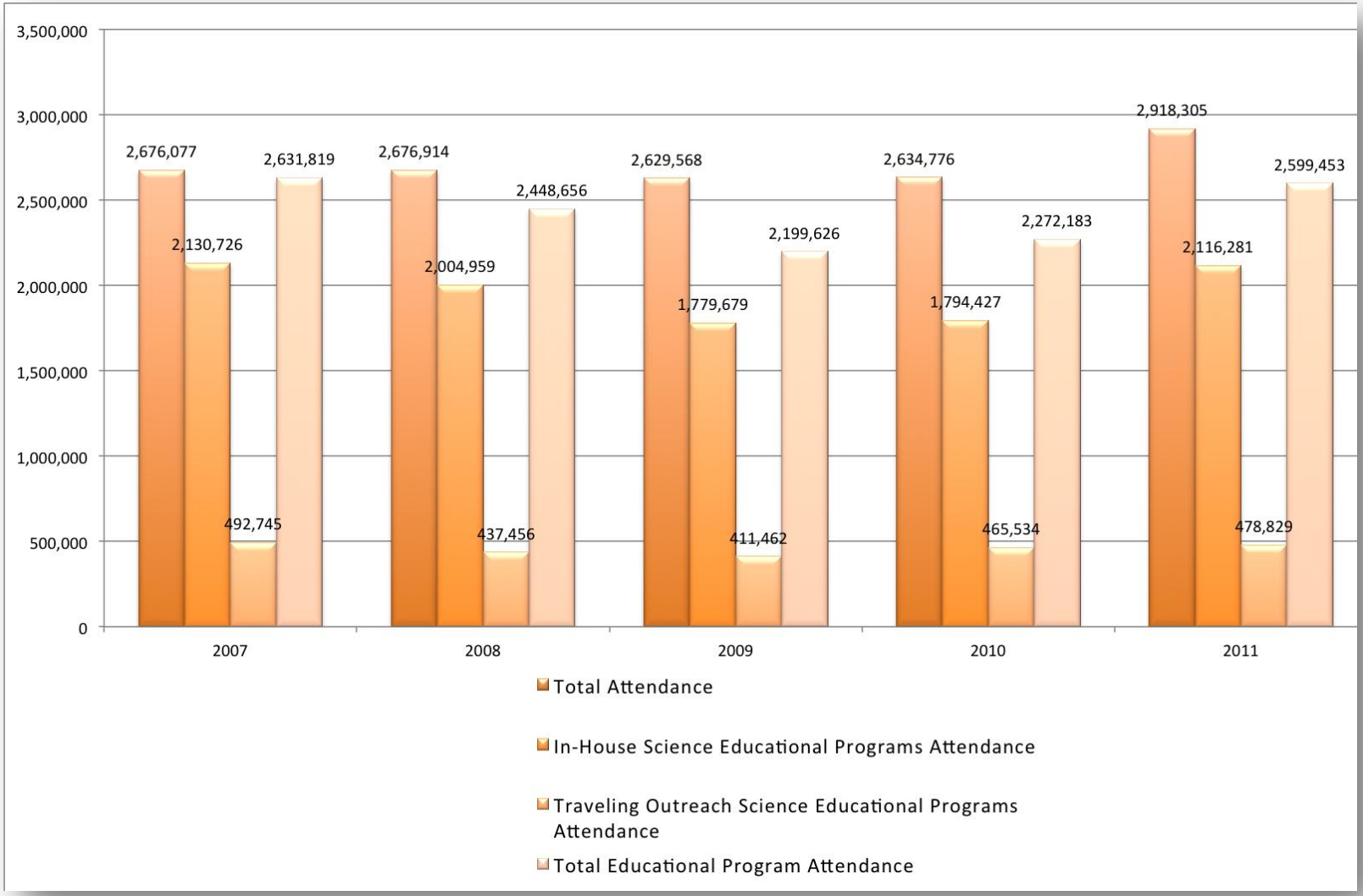
ENTREPRENEURIAL ENVIRONMENTS

- **Generating Revenue** – Ticket sales / fees for service
- **Expanding Markets in NC** – Statewide service
- **Leveraging State Dollars** – Sustainable budgets for science & technology education and career development

GRASSROOTS SCIENCE

KEY PERFORMANCE INDICATORS

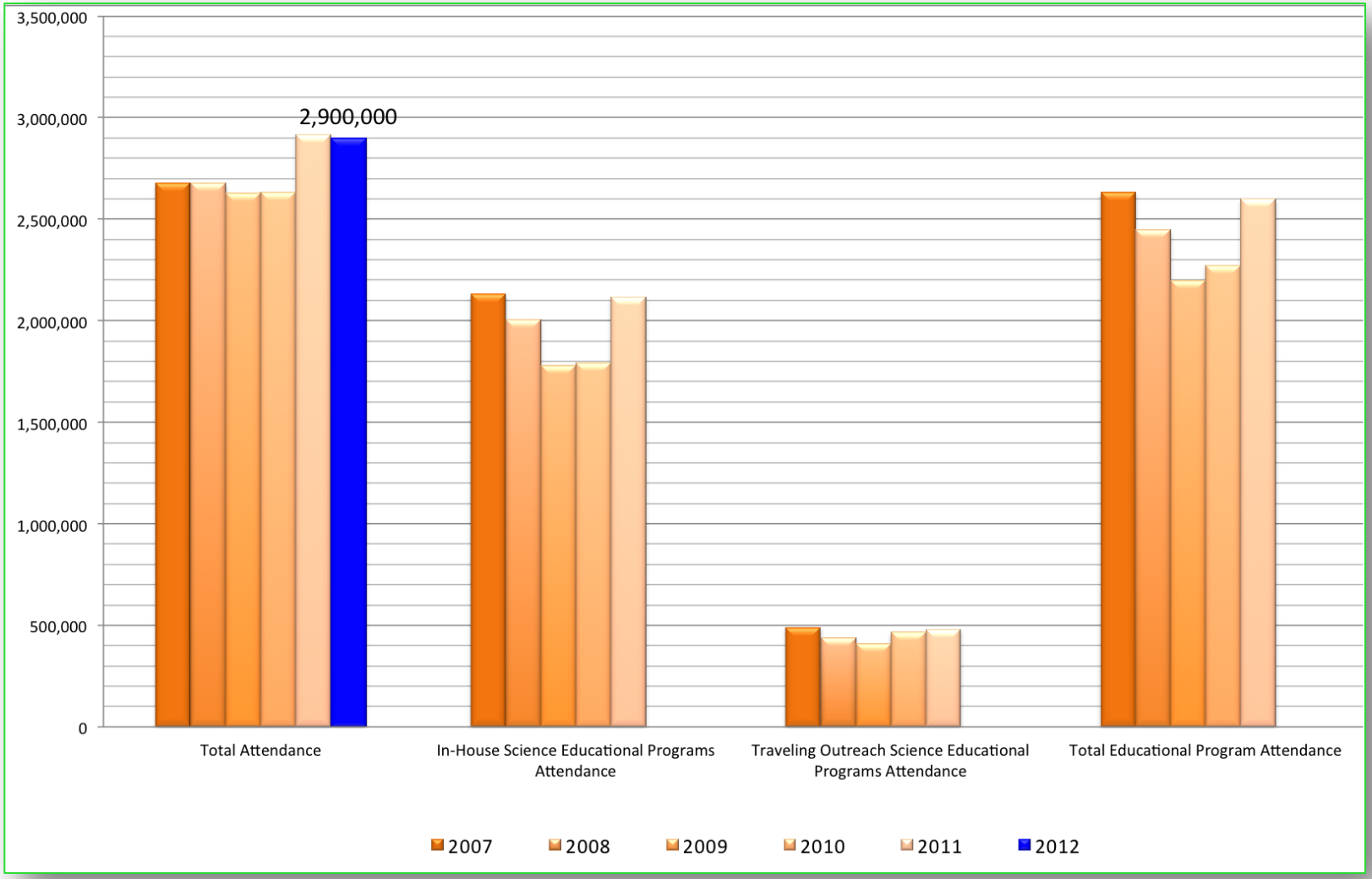
- PROGRAM ATTENDANCE – by year (2007-2011)



GRASSROOTS SCIENCE

KEY PERFORMANCE INDICATORS

- PROGRAM ATTENDANCE – by program class (2007-2011)



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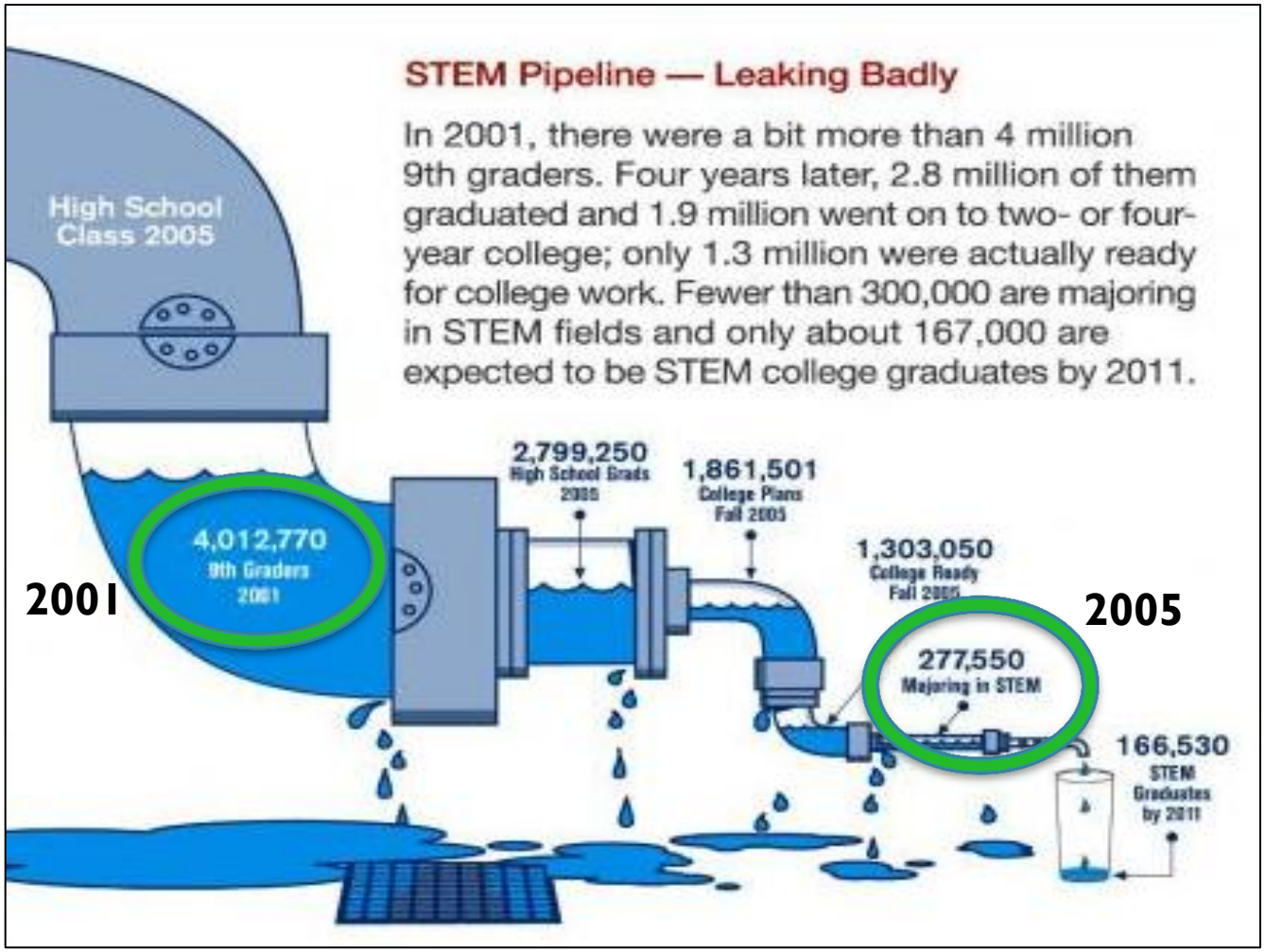
GRASSROOTS SCIENCE MUSEUMS:

- STEM Career Development



GRASSROOTS SCIENCE

NC KEY ECONOMIC TRENDS (FRD)

- Manufacturing bottomed out at about 430,000 employees.
- By November 2012, 439,700 were estimated to be employed in manufacturing.
- The good news is the industry grew by 6,800 jobs over last year and appears poised for additional gains in 2013.

GRASSROOTS SCIENCE

A NATIONAL MODEL:
The Grassroots Science Museums

- *The ONLY Statewide Network of Science and Technology Museums in the US!*

GRASSROOTS SCIENCE

STEM – GOVERNORS' COMMENTS

- *Recent Comments on T-BED (Technology-Based Economic Development)*

Gov. Bob McDonnell (Virginia)

State of the Commonwealth Address (1-9-2013):

- "Students are falling behind in mastering the STEM disciplines essential for the global economy."

- I'm asking you to approve funding to support new teachers who teach science, technology, engineering or mathematics…"

GRASSROOTS SCIENCE

STEM – GOVERNORS' COMMENTS

- *Recent Comments on T-BED (Technology-Based Economic Development)*

Gov. Mary Fallin (Oklahoma)

State of the State Address (2-4-2013):

- "How can we attract the jobs of the future?"
- "The answer, as our study shows, is by strengthening our workforce. One way to do that is by emphasizing STEM — or science, technology, engineering, and mathematics — in all levels of education."
- "... It is critical to raise Oklahoma's academic performance and develop a highly skilled workforce…"

GRASSROOTS SCIENCE

STEM – GOVERNORS' COMMENTS

- *Recent Comments on T-BED (Technology-Based Economic Development)*

Gov. Gary Herbert (Utah)

State of the State Address (1-30-2013):

- "We must also remain fervently committed to STEM – science, technology, engineering and math education."
- "As we discuss the future of STEM, the watchword is 'alignment' – workforce alignment. Nothing matters more than preparing our children to face the new interdependent global economy."
- He is reprioritizing budgets to provide, "…a full $40 million for STEM programs to make Utah's future workforce the smartest, most skilled, and most innovative workforce this nation has ever seen."

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STEM – Article

- **William Bennett** – Sec. of Education under Reagan (‘85 – ’88)

“STEM-Deficient Education Holds Back Nation’s Economy”

*“Economic forecasts point to a need for producing, over the next decade, approximately **1 million MORE** collage graduates in the **STEM fields**..”*

- **US not ready to meet this goal**
- **Current performance stunts our nation’s growth**
- **Undermines the ability of the next generation to support itself**

GRASSROOTS SCIENCE

STEM – Business Environment

- *Contributing to Tech-Based Economic Development & Advanced Manufacturing*

Bio-Science Sector in NC

- ***237, 655 jobs*** */ Earning $15 billion annually*
- *Produces $1.7 billion in taxes*
- *Grew **24%** (2001-2010) / Fastest in US*
- *Grew **3.5** times US bio-science national growth*

GRASSROOTS SCIENCE

STEM – Business Environment

- *Contributing to Tech-Based Economic Development & Advanced Manufacturing*

NC REGIONAL ECONOMIC DEVELOPMENT PARTNERSHIPS

IEI's Forum on Manufacturing (2-12-2013)

"Manufacturing needs to be seen by our children early on as career options. The science museums play a critical role in cultivating our economic future"

GRASSROOTS SCIENCE

STEM – Business Environment

- *Contributing to Tech-Based Economic Development & Advanced Manufacturing*

Department of Commerce

Sec. Sharon Decker

IEI's Forum on Manufacturing (2-12-2013)

"The Grassroots Science Museums are critical to our manufacturing future to get kids ready for high-tech jobs.
We have to get to our kids early"

GRASSROOTS SCIENCE

STEM – Business Environment

- *Contributing to Tech-Based Economic Development & Advanced Manufacturing*

Department of Commerce: New Position

"ASST. SECRETARY of MANUFACTURING"

- **Workforce Development**
- **Recruitment**

GRASSROOTS SCIENCE MUSEUMS:

GRASSROOTS SCIENCE

- Traveling Exhibits - (In Partnership with **Department of Commerce**, **Office of Science & Technology)**

nano

An engaging and interactive mini-exhibition for family audiences about nanoscale science, engineering, and technology.

GRASSROOTS SCIENCE MUSEUMS:

- Traveling Exhibits (In Partnership with **NCSU**)

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CYBERNAUTS

- advancing computational thinking through scalable cyber-learning exhibits for public audiences

GRASSROOTS SCIENCE

A NATIONAL MODEL:
The Grassroots Science Museums

- *The ONLY Statewide Network of Science and Technology Museums in the US!*

GRASSROOTS SCIENCE

STEM – Business Environment

- *Contributing to Tech-Based Economic Development & Advanced Manufacturing*

- **Expand STEM talent / Strengthen the STEM talent pipeline**
- **Increase awareness / reduce barriers in tech-based careers & advanced manufacturing**
- **Connect to the private sector:**
  - Motivated and prepared workforce
  - Attract more to tech-based careers
  - Address aging demographics of skilled workers

GRASSROOTS SCIENCE

A PUBLIC /PRIVATE PARTNERSHIP:

Preparing Children for the STEM Fields

STEM

***S**cience, **T**echnology, **E**ngineering & **M**ath*

Public / Private Partnership

***5.8%** State Funding -*

$16.[16] leveraged per $1 state funding

STEM Learning

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GRASSROOTS SCIENCE

A PUBLIC / PRIVATE PARTNERSHIP

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GRASSROOTS SCIENCE MUSEUMS:

GRASSROOTS SCIENCE

- **Goal (FY2013-14)**

	2013
TARGET (FY2013-14)	NC STATE SUPPORT (27 SCIENCE MUSEUMS) **$2,900,000**
	SUPPORT AS A % OF COMBINED ANNUAL INCOME **6.1%**

- **Public / Private Partnership** – Keep the ability to leverage other funds
- **Link STEM learning & STEM working** – Remain an effective tool in NC's economic development tool chest
- **Statewide Impact** – Continue providing STEM education to all 100 counties
- **Competitive Future** – Attract youth to careers in advanced manufacturing and the STEM fields / Educate youth and adults in STEM for NC's competitive future
- **Tourism** - Strengthen communities and regional economic development through tourism, business recruitment, and quality of life experiences.

GRASSROOTS SCIENCE

GRASSROOTS SCIENCE MUSEUMS:

- **Goal (FY2013-14)**

	2013
GOAL	**1. LEVERAGE STATE FUNDS:** ▪ Manage the public/private partnership revenue system ▪ **$2,900,000** ▪ (**6.1%** of combined annual income)
	2. STEM EDUCATION & CAREER DEVELOPMENT: ▪ STEM Educational Programs ▪ STEM Educational Exhibits ▪ STEM Traveling Programs to ALL 100 Counties ▪ STEM Teacher Development Educational Programs ▪ Career Development / Convener Role with STEM Businesses